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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte DAWN WHITE*

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Appeal 2009-013887  
Application 10/640,089  
Technology Center 1700

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Decided: April 23, 2010

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Before CATHERINE Q. TIMM, BEVERLY A. FRANKLIN, and  
LINDA M. GAUDETTE, *Administrative Patent Judges*.

TIMM, *Administrative Patent Judge*.

DECISION ON APPEAL

I. STATEMENT OF CASE

Appellant appeals under 35 U.S.C. § 134 from the Examiner's decision to reject claims 1-4, 10-15, 22-31, 34-37, 39, and 43 under 35 U.S.C. § 102(e) as anticipated by Doumanidis (US 6,450,393 B1, issued September 17, 2002) and claims 5-9, 16-21, 32, 33, 38, and 40-42 under 35 U.S.C. § 103(a) as obvious over Doumanidis. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

Appellant's invention relates to the control of bond-zone parameters in ultrasonic object consolidation and similar processes (Spec. 1:6-8).

Claims 1 and 5 are illustrative:

1. An improved additive manufacturing process, comprising the steps of:

providing a computer-aided design (CAD) description of a part to be fabricated;

providing a feedstock of material increments, each having a peripheral shape and a bonding surface;

consolidating the increments at a bond zone associated with their respective bonding surfaces in accordance with the CAD description to produce the part without melting the increments in bulk; and

performing the following steps, alone or in combination, to improve uniformity in fabrication:

maintaining consistent energy delivery to the bond zone;

maintaining consistent stiffness and mechanical resistance to vibration in the bond zone; and

maintaining uniform thermal conditions in the bond zone.

5. The method of claim 3, further including the use of a look-up table containing previously identified weld parameters.

## II. DISCUSSION

### A. CLAIM 1

Regarding the first rejection, Appellants present arguments with respect to only independent claim 1 (Br. 3-4). Accordingly, we decide the issue presented below with respect to independent claim 1 as representative of the entire group of claims rejected under 35 U.S.C. § 102(e).

#### 1. ISSUE ON APPEAL

The Examiner asserts, and Appellant does not contest, that claim 1 encompasses processes including only one of the three recited “maintaining” steps (Ans. 4). Accordingly, the first issue arising from the contentions of Appellant and the Examiner is: has Appellant identified a reversible error in the Examiner’s finding that Doumanidis teaches the claimed step of “maintaining uniform thermal conditions in the bond zone”? We answer this question in the negative.

#### 2. FACTUAL FINDINGS

1. Appellant’s Specification states that “[b]roadly, control of the local thermal history in the bond zone region(s) may take advantage of process parameter control, the use of supplementary thermal control methods or a combination thereof” (Spec. 14:20-22).
2. Appellant’s Specification states that “temperature is maintained constant by changing the consolidation pressure applied, the speed at which bonding is performed, the amplitude, and the frequency of vibration” (Spec. 15:11-13; *see also* Spec. 15:21-22).
3. Appellant’s Specification also states that the bond zone is heated to a temperature near to the temperature of the feedstock, preferably between

20% and 80% of the melting temperature of the feedstock material (Spec. 14:18-20).

4. Doumanidis teaches that “[t]he temperature rise of the material is a function of the process settings, and its maximum range is between 35% and 50% of the material melting temperature” (Doumanidis, col. 9, ll. 51-54).
5. According to Doumanidis, the “process settings” are vertical pressure, vibration amplitude, and welding time (Doumanidis, col. 9, ll. 58-59).
6. Doumanidis teaches keeping vertical pressure (or clamping pressure), vibration amplitude and vibration frequency constant during welding (Doumanidis, col. 5, ll. 54-56; col. 9, ll. 66-67; and col. 10, ll. 2-6).
7. Doumanidis teaches that the welding time parameter can be adjusted between 0.1 to 1 second and automatically adjusted online by quality control devices as to produce an optimum weld (Doumanidis, col. 10, ll. 7-10). Doumanidis teaches that if the welding time is too large, melting could occur (Doumanidis, col. 10, ll. 12-13).

### 3. PRINCIPLES OF LAW

During examination, “claims . . . are to be given their broadest reasonable interpretation consistent with the specification, and . . . claim language should be read in light of the specification as it would be interpreted by one of ordinary skill in the art.” *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004) (quoting *In re Bond*, 910 F.2d 831, 833 (Fed. Cir. 1990)).

The claims must be read in view of the specification, of which they are a part. The specification “is always highly relevant to the claim

construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005) (*quoting Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). Absent claim language carrying a narrow meaning, we only limit the claim based on the specification when those sources expressly disclaim the broader definition. *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004).

“To anticipate a claim, a prior art reference must disclose every limitation of the claimed invention, either explicitly or inherently.” *In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997).

#### 4. ANALYSIS

Appellant argues that the step of “maintaining uniform thermal conditions in the bond zone” is not taught since Doumanidis does not “control the process” (Br. 3). According to Appellant, a step of “maintaining” requires some form of monitoring and feedback (Br. 4). We disagree.

Claim 1 recites “maintaining” thermal conditions, and does not expressly require monitoring and feedback, or control. Appellant’s Specification broadly describes taking advantage of process parameter control and, more specifically, describes maintaining a constant temperature by changing the consolidation pressure applied, the speed at which bonding is performed, the amplitude, and/or the frequency of vibration (FF 1 and 2). Appellant’s Specification states that temperature can be held between 20% and 80% of the melting temperature by the manipulation of these parameters (FF 3). There is no indication that the manipulation of these parameters

requires any *temperature* monitoring or feedback, and we decline to read into the claim any such requirement.

Appellant also asserts that Doumanidis does not consider maintaining the temperature because temperature is disclosed only as a byproduct or function of the process settings (Br. 3). We disagree. Under a proper claim interpretation, controlling the temperature indirectly by directly controlling other process settings is one method of “maintaining the thermal conditions.” According to Doumanidis, the temperature is maintained between 35% and 50% as a function of holding the pressure, amplitude and frequency constant and manipulating the welding time (FF 4-7). Doumanidis effectively states that welding for too long might raise the temperature above the melting point of the material (FF 7). Thus, Doumanidis teaches “maintaining uniform thermal conditions in the bond zone” within the broadest reasonable meaning given the limitation.

#### B. CLAIM 5

For the second rejection, Appellant argues the rejected claims as a group. Accordingly, we decide the issue presented below with respect to dependent claim 5 as representative of the entire group of claims rejected under 35 U.S.C. § 103(a).

##### 1. ISSUE ON APPEAL

The second issue on appeal arising from the contentions of Appellant and the Examiner is: has Appellant identified reversible error in the Examiner’s finding that “the use of a look-up table containing previously identified weld parameters” recited in claim 5 was well known and conventional in the art? We answer this question in the negative.

## 2. FACTUAL FINDING

8. The Examiner found that the use of a look up table and various adaptive control methods are well known and conventional in the art (Ans. 5).

9. There is nothing in Appellant's Specification to suggest that the use of look up tables and the other control strategies described therein are not known in the art. To the contrary, Appellant's disclosure suggests that it is the application of these control strategies for the particular uses disclosed in ultrasonic object consolidation that is unique to the present invention (Spec. 10:1-20; 16:4-21).

10. Appellant provides no argument or evidence to support a rationale that the Examiner's statements are not true (Br. 4-5).

## 3. PRINCIPLES OF LAW

The Board may affirm a rejection under 35 U.S.C. § 103 based on the Examiner's official notice of facts, without citation of references, where Appellant was sufficiently put on notice of the basis of the rejection and did not challenge the truth of the Examiner's assertion. *See In re Lundberg*, 244 F.2d 543, 551 (CCPA 1957) (examiner's statement accepted as true in light of appellant's failure to question its accuracy or to present contradicting evidence); *In re Fox*, 471 F.2d 1405, 1406-07 (CCPA 1973) (affirming rejection under 35 U.S.C. § 103 without citation of any prior art based on facts that were unchallenged by the appellant); *In re Boon*, 439 F.2d 724, 727 (CCPA 1971) (the appellants failed to rebut a finding of official notice when they offered only a bald challenge to the Examiner's findings without

presenting the requisite information or argument that creates, on its face, a reasonable doubt regarding the validity of the Examiner's findings).

#### 4. ANALYSIS

An articulated finding is required so that the applicant is presented with a basis on which to traverse the rejection. The Examiner has made such a finding (FF 8). This finding, alone, provided a sufficient basis for the Appellant to traverse the rejection by establishing that the finding was erroneous. While Appellant points out that the Examiner has provided no evidence to support the finding, Appellant failed to challenge the accuracy or truth of the finding (Br. 4-5). Thus, the Examiner's finding has not been rebutted. We also note that Appellant has not asserted that the Examiner's obviousness conclusion based on the finding is erroneous (Br. 4-5). In light of the evidence as a whole, we cannot say that Appellant has identified an error in the Examiner's rejection.

#### III. CONCLUSION

On the record before us<sup>1</sup> and for the reasons discussed above, we cannot sustain the rejections maintained by the Examiner.

#### IV. DECISION

We affirm the Examiner's decision.

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<sup>1</sup>Only those arguments actually made by Appellant have been considered in this decision. Arguments which Appellant could have made but chose not to make have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii) (2008).

V. TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

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